

Highway Stormwater Program STORMWATER MANAGEMENT PLAN



(Version 2.08; Released April 2018)

FOR NCDOT PROJECTS

	34192.3.2	TIP No.:	I-3819B / U-603	9 (County(ies):	Iredell				Page	1	of 6
				Gen	neral Project I	nformation						
WBS Element:		34192.3.2		TIP Number:	-3819B / U-60	39	Project	Type:	Roadway Widenin	ng	Date:	3/13/2019
NCDOT Contact:		Dan Duffield				Contractor / Desig	ner:	WSP				
	Address:	Design-Build					Address:	434 Fayette	eville St, Suite 1500)		
		1595 MAIL SERVI	CE CENTER(MA	AIL)				Raleigh, NO	C 27601			
		RALEIGH, NC 276	99-1595									
	Phone:	(919) 707-6611					Phone:	(919) 836-4	1071			
	Email:	dcduffield@ncdot.	gov			1	Email:	everett.gup	ton@wsp.com			
City/Town:			Statesv	ille, NC		County(ies):	Ired	ell				
River Basin(s):		Yadkin-Po	ee Dee			CAMA County?	No	No				
Wetlands within Pro	ject Limits?	Yes				•			•			
					Project Desc	ription						
Project Length (lin.	miles or feet):	4.00	0	Surrounding La	ınd Use:	Existing Interstate v	vith commercia	al, residentia	l, agricultural uses	surrounding		
				Proposed Project					Existing	g Site		
Project Built-Upon A			184.5		ac.			107.1	a			
Typical Cross Section	on Description:			n 12' FDPS and Med					WB (typical) with gr			
				interior and 4' exteri					WB (typical) with gr	rass median		
				12' FDPS and Med enter turn lane and c		GFC	Broad St: 4 la	nes w/ cent	er turn lane			
		, ,	arie divided w/ ed	criter turn lane and o	criter island							
Annual Avg Daily Tr		Design/Future:		1.0000 111 1.1 11	Year:		Existing:		10: 65,000, I-77: 64,		Yea	
General Project Nar (Description of Mini				U-6039 will provide the Drive). The project v								
Quality Impacts)				viden I-77. No direct							es, 2) modii	y trie i-// East
quanty impactor		2.000 01.001	,,,a,,,go,, a,,a o, ,,		aloonal goo me		, to juillouiou	a. 00a0	are proposed on and	p.ojoot.		
		Project is utilizing	vegetative conve	eyance to the maximi	um extent prac	ctical while utilizing t	he use of dry d	etention bas	sins to mitigate pea	k flow increas	ses due to ir	ncreases in
		impervious area. I	n total, 9 dry det	ention basins are pro	oposed on the	project providing tre	atment for 2.2	ac-ft of volu	ime at and average	precipitation	depth of 1.2	25 inches over
		impervious area. I	n total, 9 dry det		oposed on the	project providing tre	atment for 2.2	ac-ft of volu	ime at and average	precipitation	depth of 1.2	25 inches over
		impervious area. I the impervious are	n total, 9 dry det a treated. In add	ention basins are prodition, 8 preformed s	oposed on the scour holes are	project providing tree being utilized to pro	eatment for 2.2 ovide diffuse flo	ac-ft of volu ow in location	ime at and average ns surrounding 4th	precipitation Creek and a	depth of 1.2 djacent wetl	25 inches over ands.
		impervious area. I the impervious are In the NW quadrar	n total, 9 dry det a treated. In add at of the I-77/I-40	ention basins are prodition, 8 preformed so interchange, the pro	oposed on the scour holes are	project providing tree being utilized to pro	eatment for 2.2 pvide diffuse flo	ac-ft of voluous in location	ime at and average ns surrounding 4th ned tributary of Fou	precipitation Creek and ac orth Creek und	depth of 1.2 djacent wetled der I-40 and	25 inches over ands. replacing it with
		impervious area. I the impervious are In the NW quadrar a bridge. Under th	n total, 9 dry det ea treated. In add at of the I-77/I-40 e bridge, a cons	ention basins are prodition, 8 preformed s	oposed on the scour holes are oject involves rasisting of CL II	project providing tree being utilized to pro removing a 2@7x7 F riprap for stability wi	eatment for 2.2 ovide diffuse floor RCBC conveying the fill replace the earth of the following statement of the following stateme	ac-ft of volu ow in location ng an unnam existing culve	ime at and average ns surrounding 4th ned tributary of Fou ert. Upstream of th	precipitation Creek and ac orth Creek und e new bridge	depth of 1.2 djacent weth der I-40 and on I-40, a r	25 inches over ands. replacing it with new bridge will be
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(If yes, describe in the General Project Narrative; if no, justify in the

General Project Narrative)

Highway Stormwater Program STORMWATER MANAGEMENT PLAN

Deck Drains Discharge Over Water Body?

(If yes, provide justification in the General Project Narrative)

FOR NCDOT PROJECTS WBS Element: 34192.3.2 TIP No.: I-3819B / U-6039 County(ies): Iredell Page **Additional Waterbody Information** Surface Water Body (2): UT to Fourth Creek NCDWR Stream Index No.: 12-108-20 Primary Classification: Class C NCDWR Surface Water Classification for Water Body Supplemental Classification: None Other Stream Classification: None Impairments: None No Aquatic T&E Species? Comments: NRTR Stream ID: Stream SI Buffer Rules in Effect: N/A Project Includes Bridge Spanning Water Body? Deck Drains Discharge Over Buffer? N/A Dissipator Pads Provided in Buffer? N/A No (If ves. provide justification in the General Project Narrative) (If ves. describe in the General Project Narrative: if no. justify in the N/A Deck Drains Discharge Over Water Body? General Project Narrative) (If yes, provide justification in the General Project Narrative) NCDWR Stream Index No.: Surface Water Body (3): UT to Fourth Creek 12-108-20 Primary Classification: Class C NCDWR Surface Water Classification for Water Body Supplemental Classification: None Other Stream Classification: None Impairments: None Aquatic T&E Species? Comments: NRTR Stream ID: Stream SJ Buffer Rules in Effect: N/A Project Includes Bridge Spanning Water Body? Yes Deck Drains Discharge Over Buffer? Dissipator Pads Provided in Buffer? N/A (If yes, provide justification in the General Project Narrative) (If yes, describe in the General Project Narrative; if no, justify in the Deck Drains Discharge Over Water Body? General Project Narrative) (If yes, provide justification in the General Project Narrative) UT to Fourth Creek NCDWR Stream Index No.: Surface Water Body (4): 12-108-20 Primary Classification: Class C NCDWR Surface Water Classification for Water Body Supplemental Classification: None Other Stream Classification: None Impairments: None Aquatic T&E Species? No Comments: NRTR Stream ID: Stream SK Buffer Rules in Effect: N/A N/A Project Includes Bridge Spanning Water Body? Deck Drains Discharge Over Buffer? Dissipator Pads Provided in Buffer? Yes (If yes, provide justification in the General Project Narrative) (If yes, describe in the General Project Narrative; if no, justify in the Deck Drains Discharge Over Water Body? No General Project Narrative) (If yes, provide justification in the General Project Narrative) Surface Water Body (5): UT to Fourth Creek NCDWR Stream Index No.: 12-108-20 Primary Classification: Class C NCDWR Surface Water Classification for Water Body Supplemental Classification: None Other Stream Classification: None mpairments: None Aquatic T&E Species? No Comments: NRTR Stream ID: Stream SL Buffer Rules in Effect: N/A Project Includes Bridge Spanning Water Body? No Deck Drains Discharge Over Buffer? Dissipator Pads Provided in Buffer? N/A

(If yes, provide justification in the General Project Narrative)

N/A





Highway Stormwater Program STORMWATER MANAGEMENT PLAN

Other Stream Classification:

FOR NCDOT PROJECTS Version 2.08; Released April 2018) WBS Element: 34192.3.2 TIP No.: I-3819B / U-6039 County(ies): Iredell Page **Additional Waterbody Information** NCDWR Stream Index No.: Surface Water Body (6): UT to Fourth Creek 12-108-20 Primary Classification: Class C NCDWR Surface Water Classification for Water Body Supplemental Classification: None Other Stream Classification: None Impairments: None No Aquatic T&E Species? Comments: NRTR Stream ID: Stream SR Buffer Rules in Effect: N/A Project Includes Bridge Spanning Water Body? No Deck Drains Discharge Over Buffer? N/A Dissipator Pads Provided in Buffer? N/A (If ves. provide justification in the General Project Narrative) (If ves. describe in the General Project Narrative: if no. justify in the N/A Deck Drains Discharge Over Water Body? General Project Narrative) (If yes, provide justification in the General Project Narrative) NCDWR Stream Index No.: Surface Water Body (7): UT to Fourth Creek 12-108-20 Primary Classification: Class C NCDWR Surface Water Classification for Water Body Supplemental Classification: None Other Stream Classification: Impairments: None Aquatic T&E Species? Comments: NRTR Stream ID: Stream ST Buffer Rules in Effect: N/A Project Includes Bridge Spanning Water Body? Yes Deck Drains Discharge Over Buffer? **Dissipator Pads Provided in Buffer?** N/A (If yes, provide justification in the General Project Narrative) (If yes, describe in the General Project Narrative; if no, justify in the Deck Drains Discharge Over Water Body? General Project Narrative) (If yes, provide justification in the General Project Narrative) Surface Water Body (8): UT to Fourth Creek NCDWR Stream Index No.: 12-108-20 Primary Classification: Class C NCDWR Surface Water Classification for Water Body Supplemental Classification: None Other Stream Classification: None Impairments: None Aquatic T&E Species? No Comments: NRTR Stream ID: Stream SU Buffer Rules in Effect: N/A N/A Project Includes Bridge Spanning Water Body? Deck Drains Discharge Over Buffer? Dissipator Pads Provided in Buffer? No (If yes, provide justification in the General Project Narrative) (If yes, describe in the General Project Narrative; if no, justify in the Deck Drains Discharge Over Water Body? N/A General Project Narrative) (If yes, provide justification in the General Project Narrative) NCDWR Stream Index No.: Surface Water Body (9): UT to Fourth Creek 12-108-20 Primary Classification: Class C NCDWR Surface Water Classification for Water Body

Impairments:	Nor	ne							1
Aquatic T&E Species?	No	Comments:							
NRTR Stream ID:	Stream SW					Buffer Rules in Effect:		1	N/A
Project Includes Bridge Spanning Water Body?		No	Deck Drains Discharge Over Bu	ffer?	N/A	Dissipator Pads Provided	in Buffer?		N/A
Deck Drains Discharge Over Water Body?		N/A	(If yes, provide justification in	the General Project N	Narrative)	(If yes, describe in the Ge			, justify in the
(If yes, provide justification in the				Gene	eral Project Nar	rative)			
			_			_	•	•	

None

Supplemental Classification:

None





(If yes, describe in the General Project Narrative; if no, justify in the

General Project Narrative)

Highway Stormwater Program

Deck Drains Discharge Over Water Body?

(If yes, provide justification in the General Project Narrative)

STORMWATER MANAGEMENT PLAN Version 2.08; Released April 2018) FOR NCDOT PROJECTS WBS Element: 34192.3.2 TIP No.: I-3819B / U-6039 County(ies): Iredell Page **Additional Waterbody Information** Surface Water Body (10): UT to Fourth Creek NCDWR Stream Index No.: 12-108-20 Primary Classification: Class C NCDWR Surface Water Classification for Water Body Supplemental Classification: None Other Stream Classification: None Impairments: None No Aquatic T&E Species? Comments: NRTR Stream ID: Stream SX Buffer Rules in Effect: N/A Project Includes Bridge Spanning Water Body? No Deck Drains Discharge Over Buffer? N/A Dissipator Pads Provided in Buffer? N/A (If ves. provide justification in the General Project Narrative) (If ves. describe in the General Project Narrative: if no. justify in the N/A Deck Drains Discharge Over Water Body? General Project Narrative) (If yes, provide justification in the General Project Narrative) NCDWR Stream Index No.: Surface Water Body (11): UT to Fourth Creek 12-108-20 Primary Classification: Class C NCDWR Surface Water Classification for Water Body Supplemental Classification: None Other Stream Classification: None Impairments: None No Aquatic T&E Species? Comments: NRTR Stream ID: Stream SBA Buffer Rules in Effect: N/A Project Includes Bridge Spanning Water Body? No Deck Drains Discharge Over Buffer? **Dissipator Pads Provided in Buffer?** N/A (If yes, provide justification in the General Project Narrative) (If yes, describe in the General Project Narrative; if no, justify in the Deck Drains Discharge Over Water Body? N/A General Project Narrative) (If yes, provide justification in the General Project Narrative) Surface Water Body (12): NCDWR Stream Index No.: Primary Classification: NCDWR Surface Water Classification for Water Body Supplemental Classification: Other Stream Classification: Impairments: Aquatic T&E Species? Comments: NRTR Stream ID: **Buffer Rules in Effect:** Project Includes Bridge Spanning Water Body? Dissipator Pads Provided in Buffer? Deck Drains Discharge Over Buffer? (If yes, describe in the General Project Narrative; if no, justify in the (If yes, provide justification in the General Project Narrative) Deck Drains Discharge Over Water Body? General Project Narrative) (If yes, provide justification in the General Project Narrative) Surface Water Body (13): NCDWR Stream Index No.: Primary Classification: NCDWR Surface Water Classification for Water Body Supplemental Classification: Other Stream Classification: Impairments: Aquatic T&E Species? Comments: NRTR Stream ID: Buffer Rules in Effect: Project Includes Bridge Spanning Water Body? Deck Drains Discharge Over Buffer? Dissipator Pads Provided in Buffer?

(If yes, provide justification in the General Project Narrative)



Highway Stormwater Program



STORMWATER MANAGEMENT PLAN

(Version 2.08; Released April 2018) FOR NCDOT PROJECTS										
	WBS Element:		TIP No.:	I-3819B / U-6039	County(ies):	Iredell			Page 5	of 6
Preformed Scour Holes and Energy Dissipators										
Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Energy Dissipator Type	Riprap Type	Drainage Area (ac)	Conveyance Structure	Pipe/Structure Dimensions (in)	Q10 (cfs)	V10 (fps)	BMP Associated w/ Buffer Rules?
22	Y_S - 119+77.66 222 LT	(1)Fourth Creek	PSH	Class 'B'		Pipe	18	9.0	12.0	N/A
22	Y_S - 120+90.01 117 LT	(1)Fourth Creek	PSH	Class 'B'		Pipe	15	0.5	5.6	N/A
22	Y_S - 122+17.70 152 RT	(1)Fourth Creek	PSH	Class 'B'		Pipe	18	6.1	12.7	N/A
22	Y_S - 123+37.62 161 RT	(1)Fourth Creek	PSH	Class 'B'		Pipe	15	3.7	10.4	N/A
22	Y_S - 125+00.28 182 RT	(1)Fourth Creek	PSH	Class 'B'		Pipe	15	5.6	10.7	N/A
22	YRPC - 22+09 79 RT	(3)UT to Fourth Creek	PSH	Class 'B'		Pipe	18	4.6	10.1	N/A
10	YRPCA - 16+67.32 2 LT	(3)UT to Fourth Creek	PSH	Class 'B'		Pipe	18	2.3	3.7	N/A
10	YRPC - 15+11.92 70 RT	(2)UT to Fourth Creek	PSH	Class 'B'		Pipe	15	1.8	7.8	N/A

Additional Comments





Highway Stormwater Program STORMWATER MANAGEMENT PLAN

(Version 2.08; Released April 2018)

STORMWATER MANAGEMENT PLA FOR NCDOT PROJECTS

WBS Element: 34192.3.2 TIP No.: I-3819B / U-6039 County(ies): Iredell Page 6 of 6

Other Best Management Practices									
Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	BMP Type	Drainage Area (ac)	New Built-Upon Area (ac)	Volume Treated (ac-ft)	Precipitation Depth Treated over NBUA (in)	BMP Associated w/ Buffer Rules?	
10	-L- 127+01.68 244 LT	(3)UT to Fourth Creek	Dry Detention Basin	6.2	1.1	0.097681359	1.11	No	
11	-L- 144+03.15 183 RT	(4)UT to Fourth Creek	Dry Detention Basin	9.0	4.7	0.523002755	1.39	No	
17	-Y_S- 37+50 112 RT	(10)UT to Fourth Creek	Dry Detention Basin	0.7	0.5	0.060353535	1.56	No	
17	-Y_S- 44+00 105 RT	(9)UT to Fourth	Dry Detention Basin	2.5	1.2	0.147773186	1.61	No	
19	-Y_S- 66+00 155 LT	(11)UT to Fourth Creek	Dry Detention Basin	5.8	4.3	0.215105601	0.63	No	
19	-Y_S- 69+00 150 RT	(7)UT to Fourth	Dry Detention Basin	12.7	2.2	0.236524334	1.35	No	
19	-Y_S- 80+00 150 LT	(7)UT to Fourth Creek	Dry Detention Basin	4.8	2.2	0.365587695	2.11	No	
20	-Y_S- 92+00 150 RT	(7)UT to Fourth	Dry Detention Basin	4.4	3.7	0.307713499	1.05	No	
23	-Y_N- 156+00.09 205 RT	(5)UT to Fourth Creek	Dry Detention Basin	3.0	0.9	0.118250689	1.68	No	

Additional Comments

Basin located at -Y_S- 66+00 is constrained spacially due to existing ROW limits and the presence of a jurisdictional stream in the vicinity. This basin was mandated by the RFP for the project and was sized to the maximum extent to avoid impacts to the adjacent jurisdictional feature and avoid additional ROW acquisition.